

Permutit[®]

**USER & INSTALLER
HANDBOOK**

**MODELS
825-925-932**

Domestic Water Softeners



Your New Water Softener

With over 75 years of experience we have manufactured your new Permutit water softener to the highest standards from quality, corrosion-free materials, to give you many years of trouble-free softened water.

The Permutit system, still taught in schools and colleges today, is simple. Hard water passes through a cylinder containing a special softening resin. The hardness minerals in the water are removed by the resin, leaving softened water. Periodically the resin is cleaned by rinsing with a brine solution which then flushes the accumulated hardness minerals to a nearby drain. This process is called regeneration.

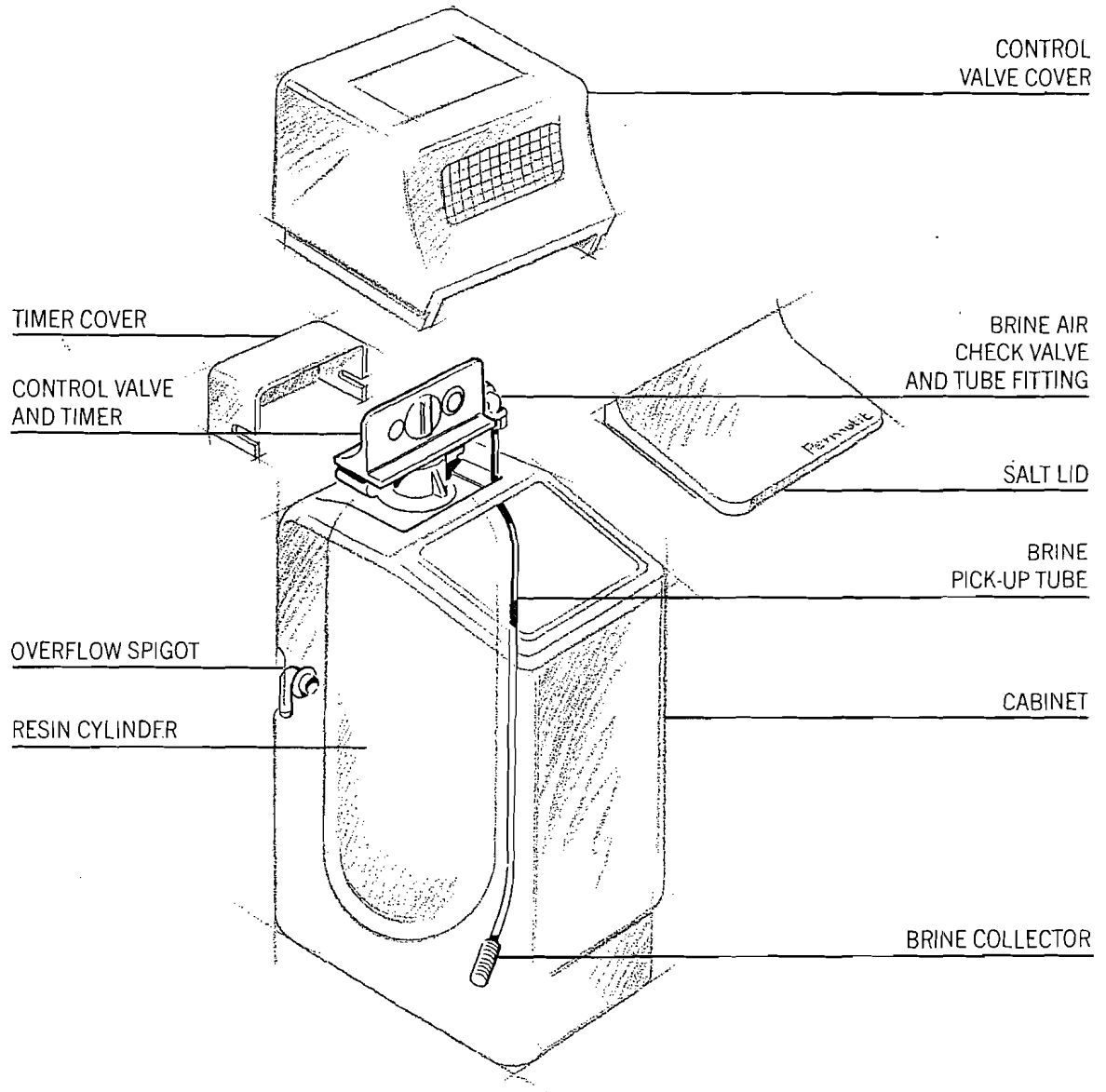
Your softener is easy to use – all you need to do is top up with salt from time to time and the softener takes care of the rest, 24 hours a day.

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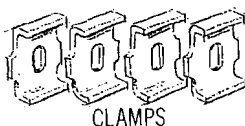
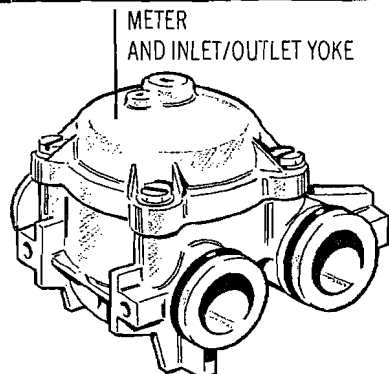
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Unpacking your Softener

Fig. 1



PLUS FOR 925/932 MODELS



INSTALLATION KIT

- Check Valve
- Bypass Set (comprising 3 valves)
- Inlet & Outlet Hoses & Filters
- ~~Tees~~
- Drain/Overflow Hose & Clips
- Water Hardness Test Kit

Installation of your Softener

The installation of a Permutit water softener is relatively easy to carry out, but we recommend that this work is undertaken by a plumber or an experienced DIY handyman.

Note: The installation of all water fittings should be in accordance with local water byelaws and the softener, and all associated pipework, must be protected against freezing.

BEFORE YOU START

Before starting the installation, check that the following requirements can be met:

Maximum water temperature 50°C (122°F)

Minimum working pressure 1.7 bar (25 psi)

Maximum working pressure 6.8 bar (100 psi) – **Note** that night-time pressures may be much higher than daytime, therefore we recommend that if **daytime pressure exceeds 4.76 bar (70 psi) a pressure limiting valve should be fitted.**

A pressure limiting valve is available from Permutit – ask for part no. 536003.

A continuous supply of water meeting the above pressure and temperature requirements must be available.

DECIDING WHERE TO LOCATE THE SOFTENER

It is most practical to site the softener as near as possible to the incoming water main. However, the softener can be located anywhere in the home or even outside, providing that adequate protection against the elements is provided.

PLUMBING COMPONENTS NEEDED

The installation kit provides the basic plumbing components, but additional piping and connectors (capillary and/or compression copper fittings) should be used as required. Use of plastic plumbing fittings with copper pipe may affect the electrical earthing or bonding of the copper pipe. We advise you to contact an electrician about the implications on your system.

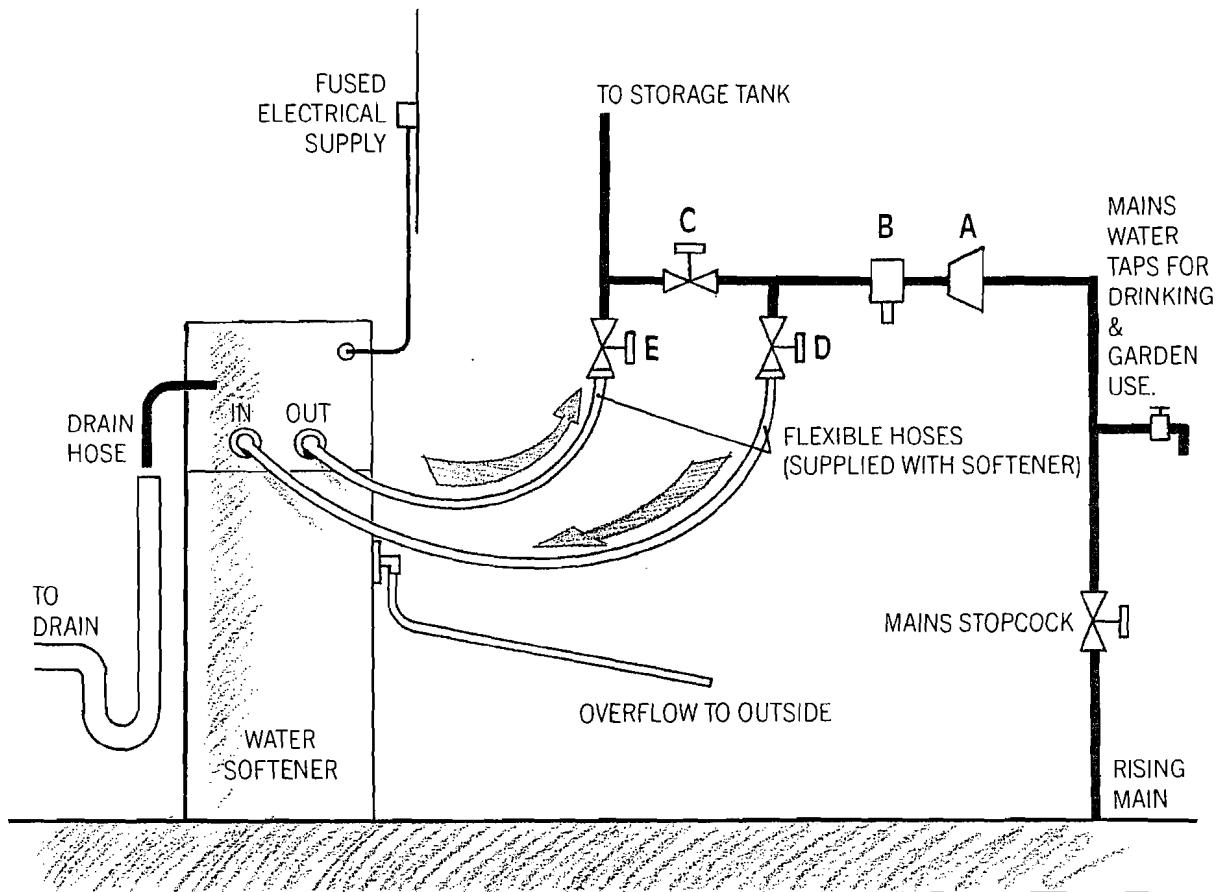
Plumbing must be carried out in accordance with local byelaws.

Note: Where lead pipework exists downstream of the proposed location of the softener, we advise you ask the local Water Authority for advice on the replacement of lead pipework. Grants may be available for this from your local council.

ELECTRICAL REQUIREMENTS

The water softener requires a 240V, 50Hz electrical supply fused at 3 amps, taken off a power supply and **not** a lighting circuit.

Fig. 2



TYPICAL INSTALLATION DIAGRAM (SOFTENER VIEWED FROM REAR)

- A CHECK VALVE
- B PRESSURE LIMITING VALVE
- C BYPASS VALVE
- D INLET VALVE
- E OUTLET VALVE

PLEASE NOTE

THE CHECK VALVE (A) IS NO LONGER NECESSARY AS IT IS INCORPORATED WITHIN THE INLET VALVE (D)

Plumbing

Turn off the water supply at the incoming main, and then begin the plumbing as indicated in fig. 2.

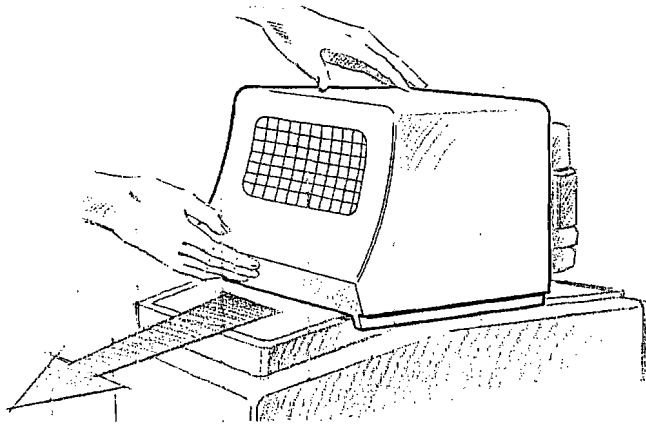
The drinking tap and any other taps to be left on the mains supply such as the garden tap must be teed off before the connection of the softener.

Note: Water Authority byelaws require that one tap in the house remains unsoftened for drinking purposes.

Next, plumb the bypass, inlet and outlet valves so that the water supply can be turned on. **Make sure that the bypass is open and the inlet and outlet valves are closed before turning the water on** (ensure all valves are turned in the **opposite** direction from 'SOFT'). **Use of plastic plumbing fittings with copper pipe may affect the electrical earthing or bonding of the copper pipe.** We advise you to contact an electrician about the implications on your system.

Remove the control valve cover by sliding forward to give access to the plumbing connections on the back of the valve.

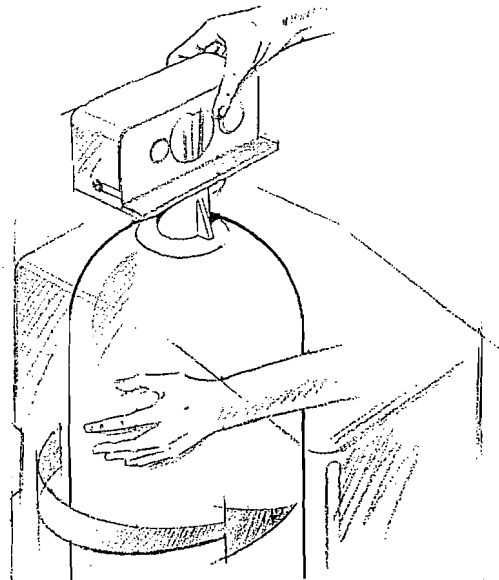
Fig. 3



Some of the connections may have been loosened during transit so check that:

A the overflow spigot is fully tightened to the cabinet.

Fig. 4

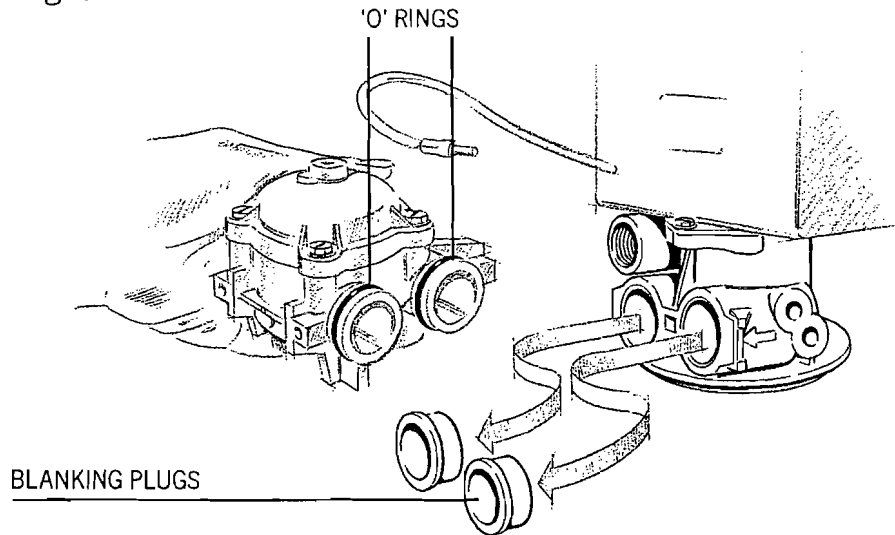


B the control valve is fully tightened to the cylinder within the cabinet. To do this hold the control valve tightly whilst twisting the cylinder sharply anti-clockwise.

FITTING THE METER (925 AND 932 MODELS ONLY)

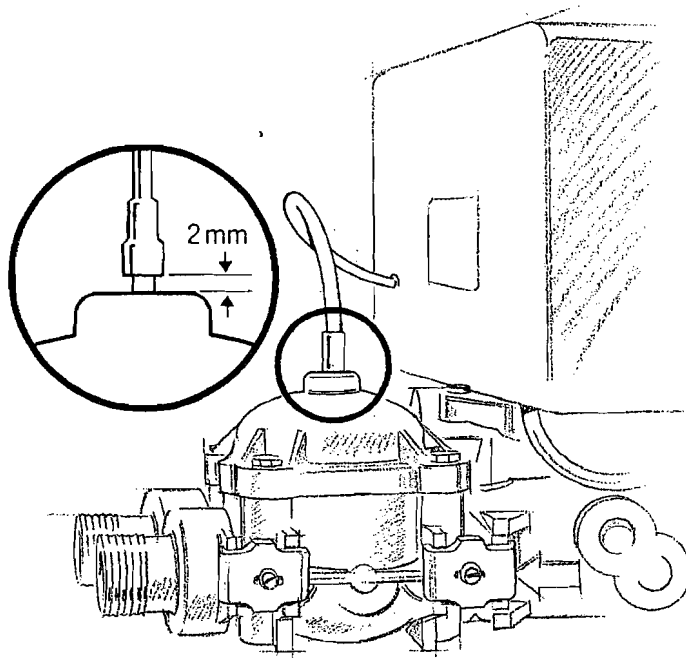
If you have a 925 or 932 water softener you now need to fit the meter.

Fig. 5



Remove the blanking plugs from the back of the control valve (fig. 5). Assemble the meter and inlet/outlet yoke onto the valve, checking that the 'O' rings are in place, and secure with the clamps and screws provided (fig. 6).

Fig. 6



Gently connect the meter drive cable protruding from the back of the control valve into the drive socket on top of the meter. Only insert as far as indicated in fig. 6.

PLUMBING (CONTINUED) – ALL MODELS

Now cut the drain/overflow hose into two lengths, fit them onto the drain and overflow spigots on the softener and secure with the plastic clips (fig. 7).

Pass the overflow hose through a hole in an outside wall so that its end can be seen. The drain hose may be connected directly into an open drain or via waste fittings similar to that used by a washing machine. A gap (minimum 20mm) must exist between the end of the drain hose and the top of the drain grid sill.

Check that new pipework is free from swarf and debris and then connect the softener to the inlet and outlet valves. Use the flexible hoses provided, with the elbow unions fitted to the softener valve and the filter discs positioned in the straight union end of the hoses.

ELECTRICAL CONNECTION

The power supply should be provided through either a switched fuse spur or a three pin plug and switched socket. In either case, a 3 amp fuse must be used and the supply must be earthed.

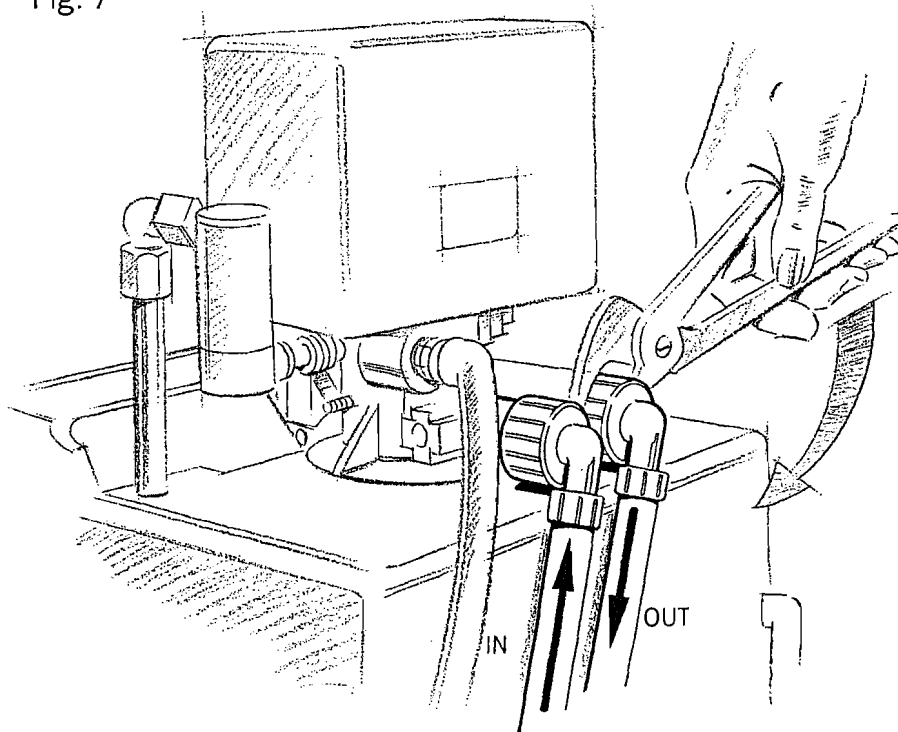
LOCATING THE SOFTENER

First check the plumbing and wiring connections are properly secured. Ensure the hoses are not kinked and the overflow hose slopes away from the softener, then move the softener into its required position.

FILLING YOUR SOFTENER WITH SALT

Ensure the softener is in its final position before filling with salt. Pour pellet or granular salt slowly into the cabinet, ensuring the final level of salt does not exceed the maximum level marked on the brine pick-up tube. **Do not overfill.**

Fig. 7



Programming your Softener

The tables on page 14 specify the necessary settings for your softener related to the size of your family and the hardness of your water supply. The figures given are based on each person in a family using an average of 160 litres (35 gallons) of water each day for washing, cooking, bathing and toilet requirements. Individual households may find they use more or less water than average and may therefore need to alter the settings accordingly.

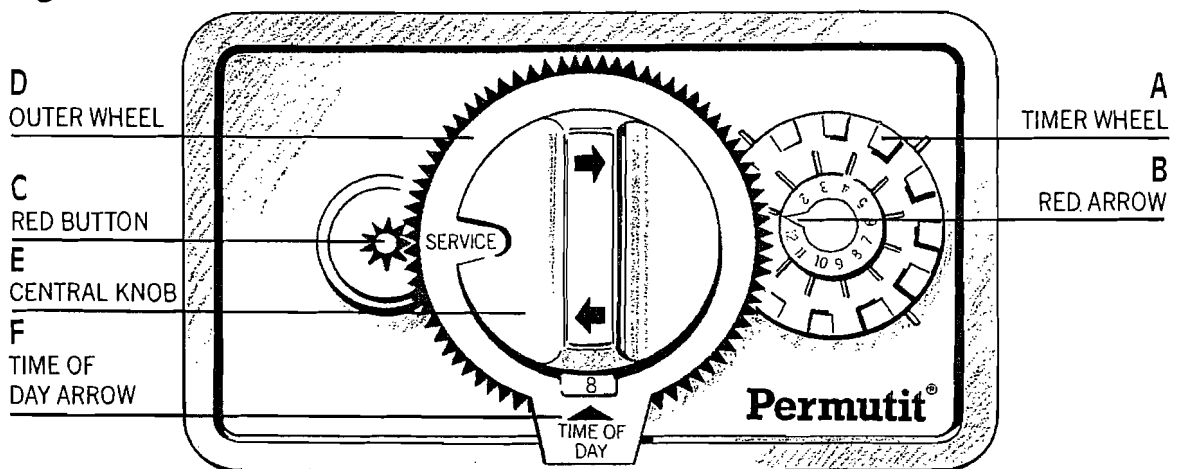
TESTING YOUR WATER HARDNESS

Use your water hardness test kit, following the instructions carefully, to measure the hardness of your water.

PROGRAMMING THE 825 MODEL

The programming of the 12-day timer for the 825 model is straightforward. The timer can be set to trigger your softener to regenerate every one, two, three, four, six or twelve days. The timer is set by sliding out the pins on wheel A in fig. 8 on the days when regeneration is required.

Fig. 8

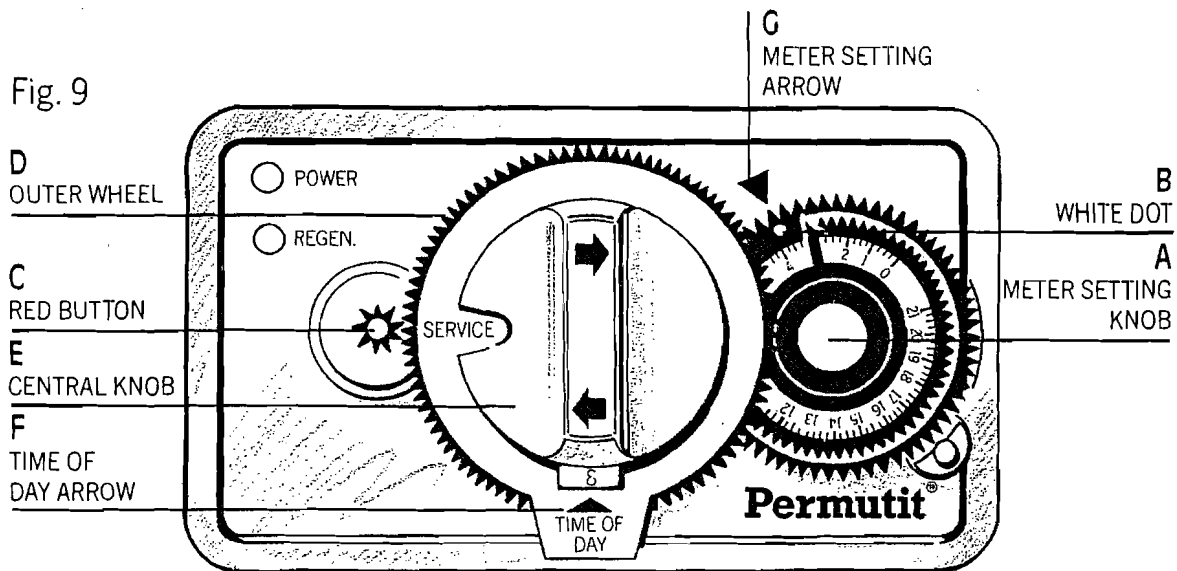


EXAMPLE:

If the tables on page 14 indicate that your softener requires regeneration every 3 days, slide out the pins on wheel A (fig. 8) numbered 3,6,9,12. Then turn the wheel anti-clockwise so that day number 1 is opposite the red arrow B (fig. 8). Your softener is now programmed to operate automatically on a regular 3-day cycle.

PROGRAMMING THE 925/932 MODELS

The programming of the meter for the 925 and 932 models is very easy. All you need to do is pull out the meter setting knob A in fig. 9, turn it until the required setting is opposite the white dot, and then push the knob back in.



EXAMPLE:

If the tables on page 14 indicate that your meter setting should be 2.5, then turn the knob A so that the white dot is situated half way between 2 and 3. Push the knob back in and your meter is now programmed to regenerate as required.

SETTING THE TIMER (ALL MODELS)

To set the time of day, push in the red button C and turn the outer wheel D (not the central knob) until the correct time is visible in the centre of the window. Release the red button and ensure that its cogs re-engage with the outer wheel.

The time of regeneration is factory set to start at 2.00 am when there is generally little demand for softened water.

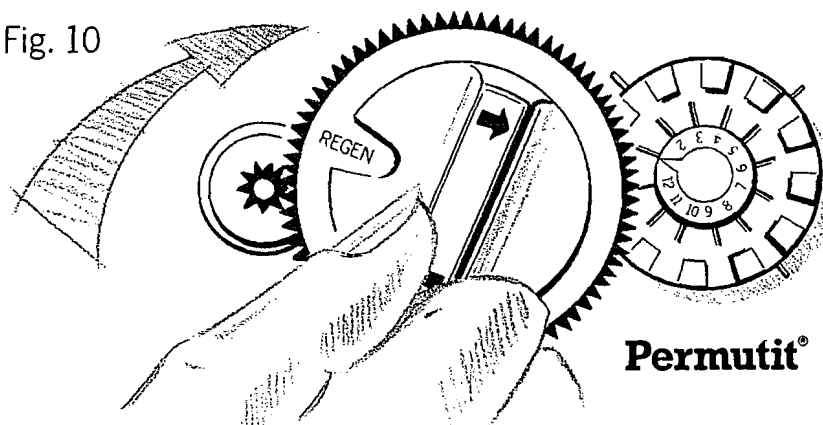
Note, however, that if you have a 925 or 932 meter controlled timer, your programming will have allowed reserve capacity for softened water to last until the next regeneration time so you should not run out of softened water.

Operating your Softener

Slowly open the softener inlet valve by turning towards 'SOFT' and check for leaks. Switch on the electrical supply to the softener.

Start the first regeneration by turning the central knob **E** clockwise until 'REGEN' appears in the cut out (fig. 10). **There will be a 15-20 minute delay before the regeneration begins.**

Fig. 10



This regeneration cannot now be cancelled. Do not turn the central knob anti-clockwise once a regeneration has been started.

During this initial regeneration, the water flowing to drain may be brown in colour. This is due to fine particles of resin from inside the resin cylinder being rinsed away. The water should clear as the resin is rinsed. Air may also be expelled from the system.

After approximately 2½ hours the regeneration cycle will have been completed and the central knob returned to 'SERVICE'. The bypass valve can now be closed and the softener outlet valve slowly opened, by turning both valves towards 'SOFT'. Check for leaks.

Finally, fit the control valve cover and salt lid and your softener is now installed and operating.

Your household water supply will start to be softened but as your plumbing system is already full of hard water, you may not experience the full benefit of the softened water for three or four days.

REGENERATING YOUR SOFTENER MANUALLY

If for any reason you require a manual regeneration, turn the central knob on the valve to 'REGEN' in exactly the same way as for the first regeneration (above). The regeneration cycle will then be completed automatically and the knob will return to 'SERVICE'.

Note for 925/932 models only:

When a regeneration has just taken place, the white dot will line up with the arrow. When the setting zero is in line with the arrow a regeneration will take place during the following night.

General Information

SALT – The salt cabinet will need to be refilled from time to time. **It is essential that the minimum quantity of salt is maintained in the cabinet** for it to operate efficiently – the maximum and minimum salt levels are indicated on the brine pick-up tube.

Pour the salt slowly into the cabinet to avoid possible damage to internal fittings. **Always use either pellet or granular salt** recommended for water softeners.

WATER LEVEL – The water level in the salt cabinet may vary. There is no cause for concern unless the water level rises to the point where it starts to run through the overflow pipe. Make sure that the salt level is below the maximum marking on the brine pick-up tube. If this is not the cause of the problem ring Permutit and ask for 'service'.

HARDNESS IN WATER – If your water is becoming hard occasionally, either your water consumption has increased or the hardness of your water supply has risen (this is not uncommon, particularly during a dry summer). All you need to do is decrease the number of days between regenerations if you have an 825 model, or change the meter setting if you have a 925 or 932 model.

CLEANING – The softener may be cleaned with a damp cloth and detergent. **Do not use bleaches, solvents or spirits** as they may damage the softener.

USE OF SOFTENED WATER

DRINKING – The Department of Health advises that water from a domestic water softener should not be used for drinking and cooking. **All water for mixing with powdered milk for babies must be taken from an unsoftened mains tap** as powdered milk and softened water both contain sodium for which young babies have a limited tolerance. Anyone on a sodium restricted diet should follow their doctor's advice.

WASHING MACHINES – You will need much less soap powder, maybe 50% less than before you installed your water softener. Too much powder will result in too much lather and clothes will not rinse properly.

DISHWASHERS – Your dishwasher will no longer need to be filled with salt as this was only required to soften the water in the dishwasher.

STEAM IRONS/CAR BATTERIES – Distilled or deionised water should be used in steam irons and car batteries, **not softened water**.

AQUARIUMS – Most fish will find softened water acceptable, but ask for advice from your local aquarium supplier.

WATERING PLANTS – Some houseplants and garden plants dislike softened water whilst others prefer it. Watering the garden with softened water is wasteful and may cause the capacity of the softener to be exceeded before the next regeneration is due. We advise that the external tap be connected to the hard water supply.

If your Softener goes wrong

Most common faults can be easily cured by following this guide. Simply read down this list until you find your problem and then follow the checklist.

If your softener still has a problem, please call us **FREE** on 0800 521143 and ask for '**SERVICE**'.

PROBLEM	CHECKLIST
Hard water	<ul style="list-style-type: none">- Make sure that the bypass valve is closed, (turned to 'SOFT').- Check that there is sufficient salt in the cabinet to cover the minimum level.- If an excessive amount of water has been used initiate a manual regeneration.
Prolonged hard water	<ul style="list-style-type: none">- If more water is used on a regular basis, or the hardness of the water supply has risen, (check with your water hardness test kit), increase your frequency of regeneration (825) or reset your meter (925, 932).
Softener does not regenerate	<ul style="list-style-type: none">- Check that the main electrical switch is on.- Check that fuse is intact.- Reset timer to correct time of day.
Softener regenerates at incorrect time	<ul style="list-style-type: none">- Reset timer to correct time of day.
Water overflowing from salt cabinet	<ul style="list-style-type: none">- Initiate a manual regeneration.

Softener Programming Table

Mains Water Hardness PPM (Degrees)	Softened Water Output per Regeneration Litres (Gallons)	NUMBER OF PEOPLE IN HOUSEHOLD							
		1	2	3	4	5	6	7	8

THE 825 MODEL

		NO. OF DAYS BETWEEN EACH REGENERATION							
200 (14)	2141 (471)	6	4	3	2				
220 (15)	1945 (428)	6	4	3	2				
240 (17)	1783 (392)	6	4	3	2				
260 (18)	1668 (367)	6	4	3	2				
280 (20)	1500 (330)	6	4	2	2				
300 (21)	1426 (314)	6	4	2	1				
320 (22)	1364 (300)	6	3	2	1				
340 (24)	1250 (275)	6	3	2	1				
360 (25)	1188 (261)	6	3	2	1				
380 (27)	1126 (248)	6	3	2	1				
400 (28)	1072 (236)	4	2	1	1				
420 (29)	1019 (224)	4	2	1	1				
440 (31)	972 (214)	4	2	1	1				
460 (32)	937 (206)	4	2	1	1				
480 (34)	883 (194)	4	2	1	1				
500 (35)	856 (188)	4	2	1	1				

THE 925 MODEL

		METER SETTING							
200 (14)	3250 (716)	6.50	6.25	5.75	5.50	5.25	4.00	4.50	4.25
220 (15)	2954 (651)	6.00	5.50	5.25	5.00	4.50	4.25	4.00	3.75
240 (17)	2708 (596)	5.50	5.00	4.75	4.50	4.00	3.75	3.50	3.00
260 (18)	2500 (531)	5.00	4.50	4.25	4.00	3.75	3.25	3.00	2.75
280 (20)	2321 (511)	4.50	4.25	4.00	3.75	3.25	3.00	2.75	2.25
300 (21)	2166 (477)	4.25	4.00	3.75	3.25	3.00	2.75	2.25	2.00
320 (22)	2031 (447)	4.00	3.75	3.25	3.00	2.75	2.25	2.00	
340 (24)	1911 (421)	3.75	3.50	3.00	2.75	2.25	2.00		
360 (25)	1805 (398)	3.50	3.00	2.75	2.50	2.25	2.00		
380 (27)	1710 (377)	3.25	3.00	2.50	2.25	2.00			
400 (28)	1625 (358)	3.00	2.75	2.50	2.00				
420 (29)	1547 (341)	2.75	2.50	2.25	2.00				
440 (31)	1477 (325)	2.50	2.25						
460 (32)	1413 (311)	2.50	2.00						
480 (34)	1354 (298)	2.25							
500 (35)	1300 (286)	2.00							

THE 932 MODEL

		METER SETTING							
200 (14)	5190 (1142)	10.50	10.25	10.00	9.50	9.25	9.00	8.50	8.25
220 (15)	4719 (1039)	9.50	9.25	9.00	8.50	8.25	8.00	7.50	7.25
240 (17)	4325 (952)	8.75	8.50	8.00	7.75	7.50	7.00	6.75	6.25
260 (18)	3993 (879)	8.00	7.75	7.25	7.00	6.75	6.25	6.00	5.75
280 (20)	3708 (816)	7.50	7.00	6.75	6.50	6.00	5.75	5.50	5.00
300 (21)	3460 (762)	7.00	6.50	6.25	6.00	5.50	5.25	5.00	4.50
320 (22)	3244 (714)	6.50	6.00	5.75	5.50	5.00	4.75	4.50	4.00
340 (24)	3053 (672)	6.00	5.75	5.25	5.00	4.75	4.25	4.00	3.75
360 (25)	2884 (635)	5.75	5.25	5.00	4.75	4.25	4.00	3.75	3.25
380 (27)	2732 (601)	5.25	5.00	4.75	4.25	4.00	3.75	3.25	
400 (28)	2595 (571)	5.00	4.75	4.50	4.00	3.75	3.50	3.00	
420 (29)	2472 (544)	4.75	4.50	4.25	3.75	3.50	3.00		
440 (31)	2360 (520)	4.50	4.25	4.00	3.50	3.25	3.00		
460 (32)	2257 (497)	4.25	4.00	3.75	3.25	3.00	2.75		
480 (34)	2163 (476)	4.25	3.75	3.50	3.25	2.75	2.50		
500 (35)	2077 (457)	4.00	3.75	3.25	3.00	2.75			

Specification

MODEL	825	925	932
Height	643mm (25 ³ / ₈ "	643mm (25 ³ / ₈ "	822mm (32 ³ / ₈ "
Depth	455mm (18"	455mm (18"	455mm (18"
Width	300mm (11 ⁷ / ₈ "	300mm (11 ⁷ / ₈ "	300mm (11 ⁷ / ₈ "
Salt Used per Regeneration	1.6kg (3.5lb)	2.0kg (4.5lb)	2.7kg (6lb)

ALL MODELS

Maximum Working Pressure	6.8 bar (100 psi)
Minimum Working Pressure	1.7 bar (25 psi)
Maximum Operating Temperature	50°C (122°F)
Electrical Supply	220/240 Volts 50Hz Fuse 3 amp

Guarantee and Service (UK ONLY)

GUARANTEE

All Permutit domestic water softeners are fully covered by a one year parts and labour guarantee against manufacturing defect from the date of installation. This guarantee does not affect the statutory rights of the consumer.

PERMUTIT EXTENDED WARRANTY

Permutit offer an extension to this warranty for a further four years, giving a total of five years' cover from installation. The full costs of all parts and labour are provided for any faults requiring repair as a result of normal operation during the warranty period. The cost of this warranty is just a few pence a day – call us **FREE** for more details.

SERVICE

We have a nationwide network of Permutit service engineers. In case of any difficulty not covered by this handbook, call us **FREE** on

0800 521143

Please complete and return the registration card supplied with your softener.

ECOWATER™
S Y S T E M S



EcoWater Systems Limited,
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